

Bioterrorism Agents Involving the Public Health, Agriculture and Wildlife Interface

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(Human) Bioterrorism Agents

- Category A
 - Anthrax (*B. anthracis*)
 - Botulism (*C. botulinum* toxin)
 - Plague (*Y. pestis*)
 - Smallpox (*variola major*)
 - Tularemia (*F. tularensis*)
 - Viral Hemorrhagic Fevers
- Category B
 - Brucellosis (*Brucella* spp)
 - Epsilon toxin of *C perfringens*
 - Food Safety Threats (*Salmonella*, *E. coli* O_{157:H7}, *Shigella*)
 - Glanders
 - Melioidosis
 - Psittacosis
 - Q fever
 - Ricin Toxin
 - Staph Enterotoxin B
 - Typhus
 - Viral Encephalitis
 - Water Safety Threats

Category A Diseases/ Agents

- The U.S. public health system and primary healthcare providers must be prepared to address various biological agents, including pathogens that are rarely seen in the United States. High-priority agents include organisms that pose a risk to national security because they
 - can be easily disseminated or transmitted from person to person;
 - result in high mortality rates and have the potential for major public health impact;
 - might cause public panic and social disruption; and
 - require special action for public health preparedness.

Category B Disease/Agents

- Second highest priority agents include those that
 - are moderately easy to disseminate;
 - result in moderate morbidity rates and low mortality rates; and
 - require specific enhancements of CDC's diagnostic capacity and enhanced disease surveillance.

“Emerging Diseases”

- HIV
- VHF
- WNV
- BSE
- SARS
- H5N1

Surveillance



Reportable Veterinary Diseases

	Botulism (<i>C. botulinum</i>)	Plague (<i>Y. pestis</i>)	Orthopox	Tularemia	Unexplained illness	Also reportable to Dept of (Human) Health
98% (40, IR 39 R 1)	10% (4, IR 2 R 2)	15% (6)	5% (2, MPx)	22% (9, R 2 M 7)	10% (4, IR 4)	15% (6, Anthrax IR)

N= 41 states

IR= Immediately reportable R= Regulated, urgently reportable

M= Monitored= regularly reportable in aggregate

National Biosecurity Resource Center for Animal Health Emergencies

The role of environmental surveillance



Environmental Surveillance

- Sample from composting pile tested
- Level A laboratory finds suspicious bacillus
- Reports to the manufacturer, “state”
 - Who has “authority”?
 - Who needs to know?
 - What are we going to do?

Environmental Surveillance

- BioWatch
 - Series of air “sentries”
 - ~20 metropolitan areas
 - Filters tested daily in LRN laboratories for a number of Category A agents
 - Notification and response systems set up
 - Environmental detection prior to the detection of (human) cases

The “One Medicine” Challenge

- What is “background”?
- What does a positive finding reveal?
- What follow-on testing/surveillance is done?
 - Who does it?
- Who is “population at risk”?
- It’s not enough to do the surveillance
 - Need to know how to interpret the results
 - Need to know how to deal with the results

Preparedness

- Ability to cope with/recover from major disasters requires basic skills and the ability to adapt
- Adaptation occurs in areas of greatest flexibility
- Partners and Systems

Lessons of WNV

- “New” disease
- Recognition
 - Veterinarian findings
 - Human health findings

Lessons of WNV

- “New” disease
- Recognition
- crisis Communication to the Public
 - Dead bird testing
 - Mosquito spraying

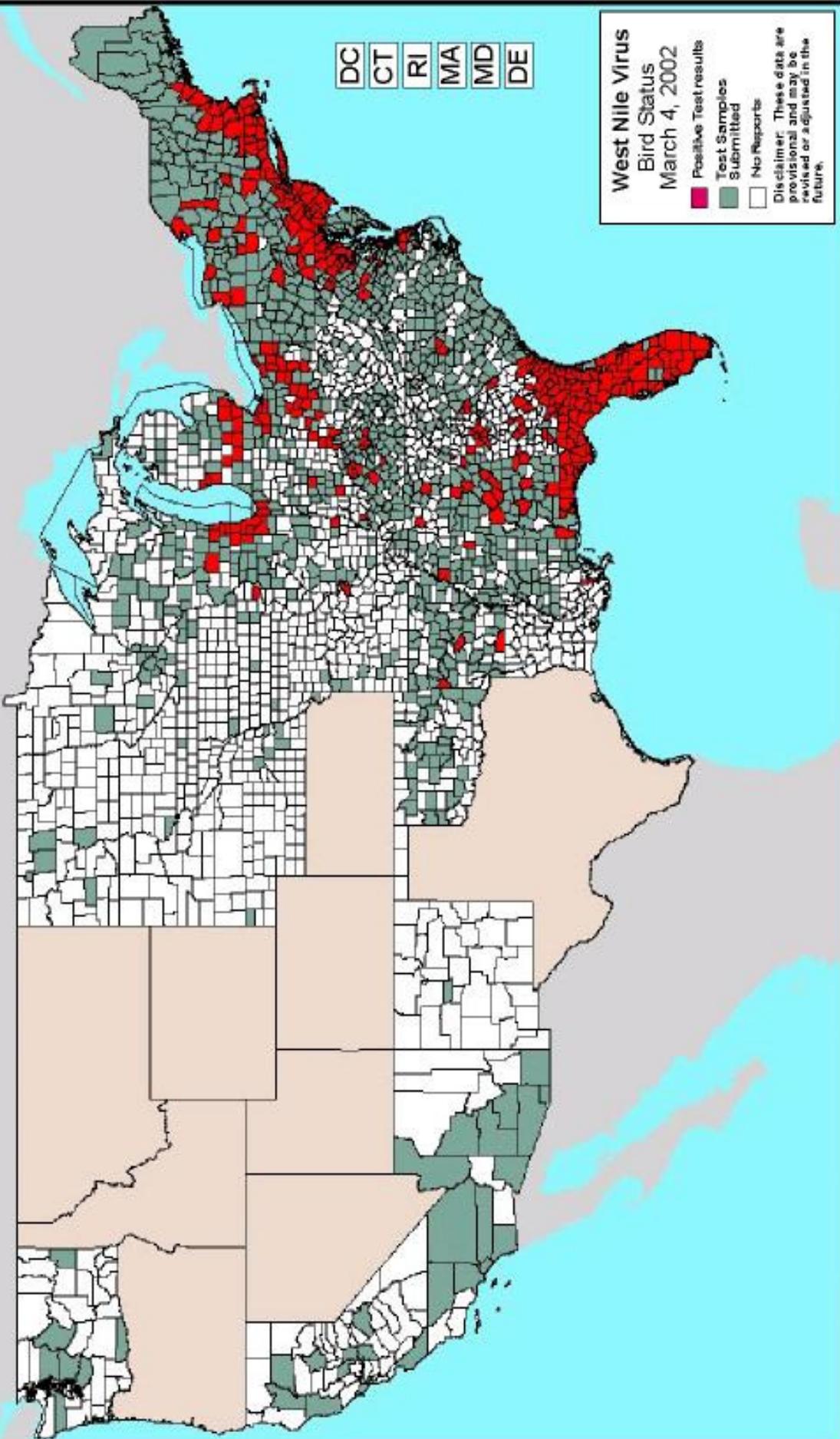
Lessons of WNV

- “New” disease
- Recognition
- crisis Communication to the Public
- Progression to “endemicity”

West Nile Virus
Bird Status
March 4, 2002

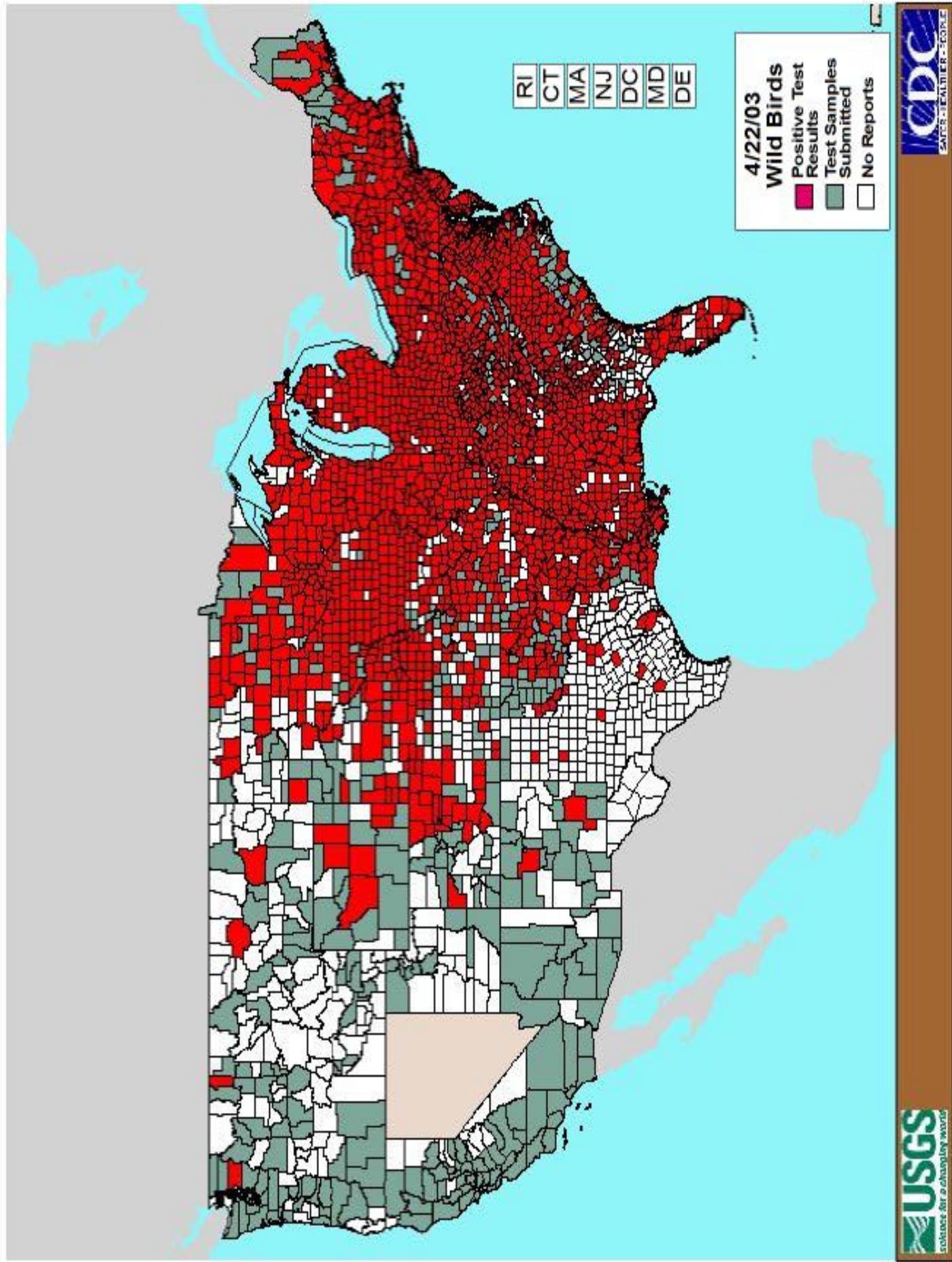
Positive Test results
Test Samples Submitted
No Reports

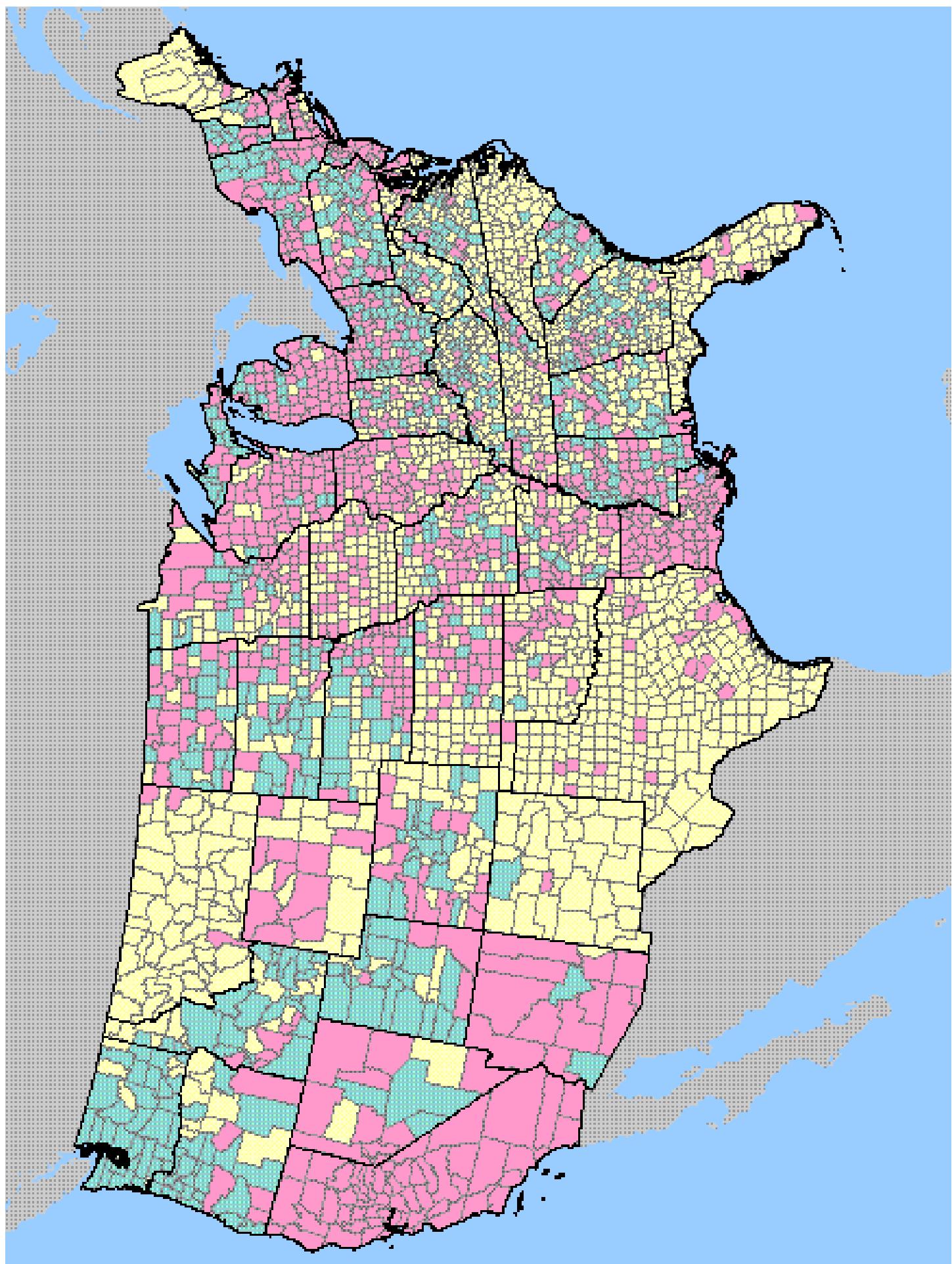
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provisional and may be
revised or adjusted in the
future.



CINDI Center for Integration of Natural Disaster Information







Lessons of WNV

- “New” disease
- Recognition
- crisis Communication to the Public
- Containment
- Progression to “endemicity”
- “Who ya gonna call?”

Do we practice
One Medicine?